

## Monterey Bay National Marine Sanctuary

# Ecosystem-based Management Initiative

## Benthic Habitat

February 16, 2012



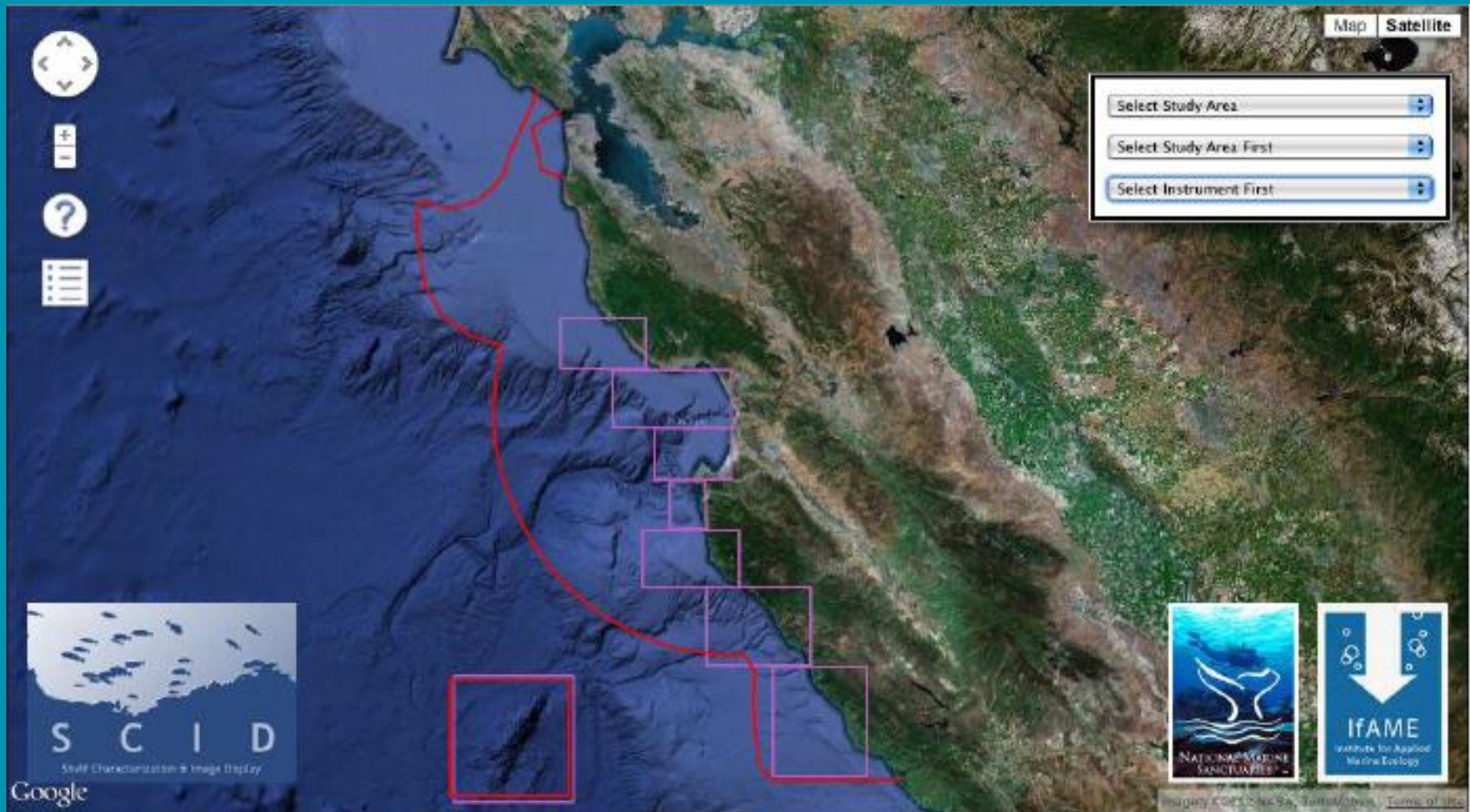






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SCID: [www.sanctuarysimon.org/regional\\_sections/maps](http://www.sanctuarysimon.org/regional_sections/maps)

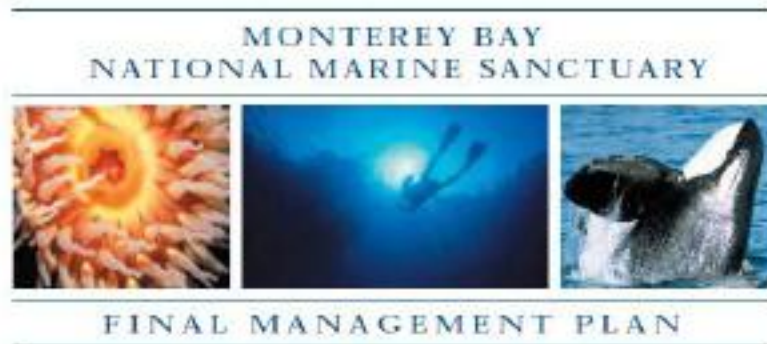


# The Central Coast Economy

Tourism, agriculture, recreational fishing, whale watching, kayaking, birding, and the commercial fishing industry

all depend on a healthy ecosystem.





## Benthic Habitat and MP Action Plans:

Ecosystem Protection  
Bottom Trawling Effects  
on Benthic Habitats  
Marine Protected Areas  
Davidson Seamount  
Education & Research

Many years of  
extensive public  
and AC input, and  
subsequent staff effort





# NATIONAL MARINE SANCTUARIES

Home

About Your Sanctuaries

Visiting Your Sanctuaries

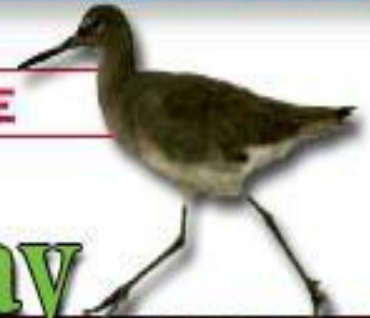
Expeditions

Education

Science



SANCTUARY SCIENCE



## Monterey Bay 2009 Condition Report

**Biologically  
structured benthic  
habitat condition:**

**fair/poor**



[Click here for larger map](#)

Maritime Heritage





THE NATIONAL ACADEMIES PRESS

# **Effects of Trawling and Dredging on Seafloor Habitat**

**2002**

**Ocean Studies Board**

**Division on Earth and Life Studies**

**National Research Council**





# Ecosystem-based Management

Integrated approach to maintaining an **ecosystem** in a healthy, productive and resilient condition

Integrated approach to **management**, recognizing interdependencies, collaboration, and balance of diverse societal objectives



*Shipping:*  
US Coast Guard

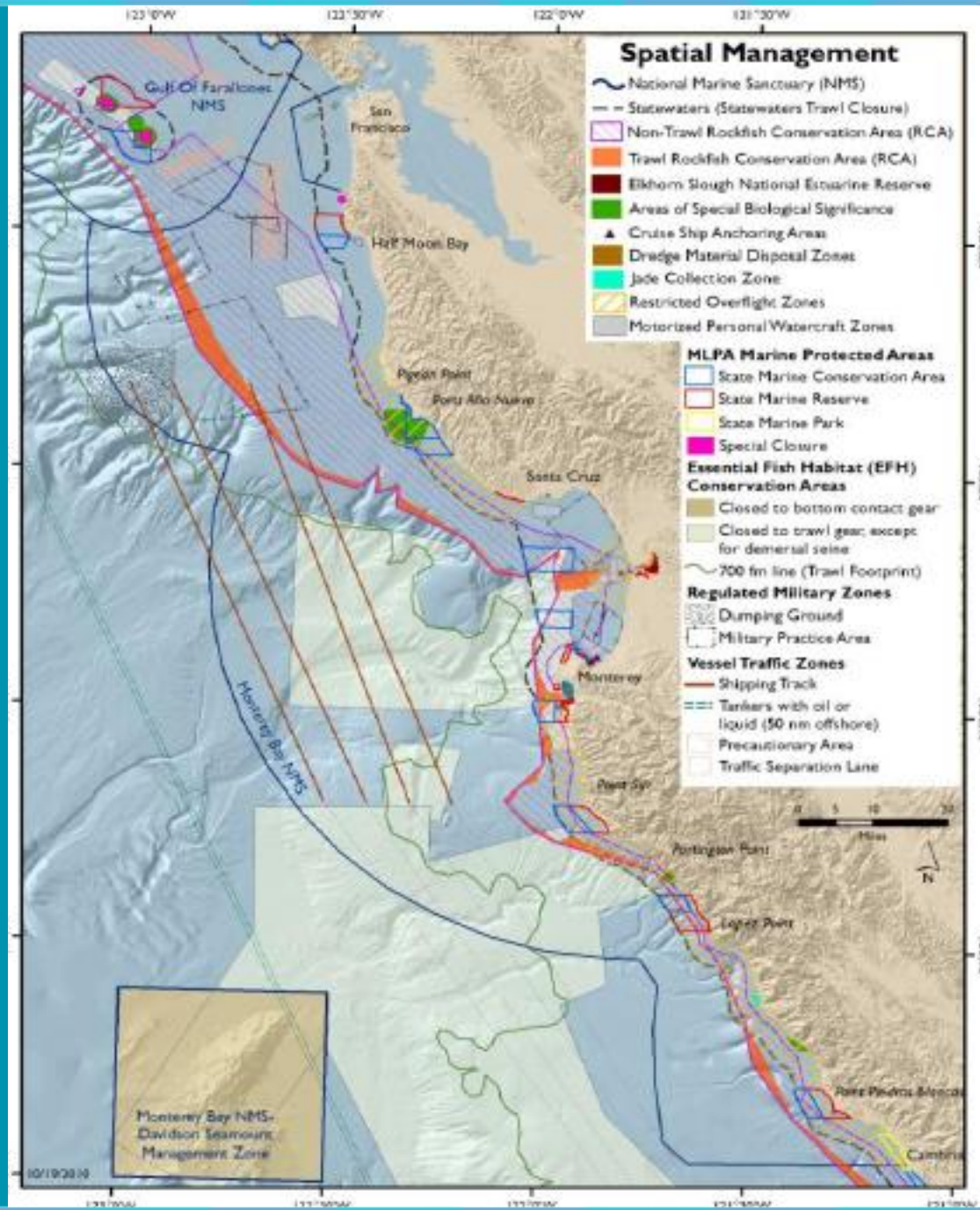
*Water Quality:*  
State and Regional Boards

*Coastal Development:*  
CA Coastal Commission

*Fisheries Stocks (State):*  
CA Dept. of Fish and Game

*Fisheries Stocks (Federal):*  
NMFS and PFMC

*Broader mandate to protect  
ecosystem resources:*  
MBNMS



# Partner Processes to Advance the EBM Initiative

**PFMC / NMFS:** Essential Fish Habitat Review

Fisheries Ecosystem Plan

**CDFG – OPC:** Marine Life Protection Act Review

**SWRCB:** Areas of Special Biological Significance

**USCG:** Port Access Route Study

# Partner Processes to Advance the EBM Initiative

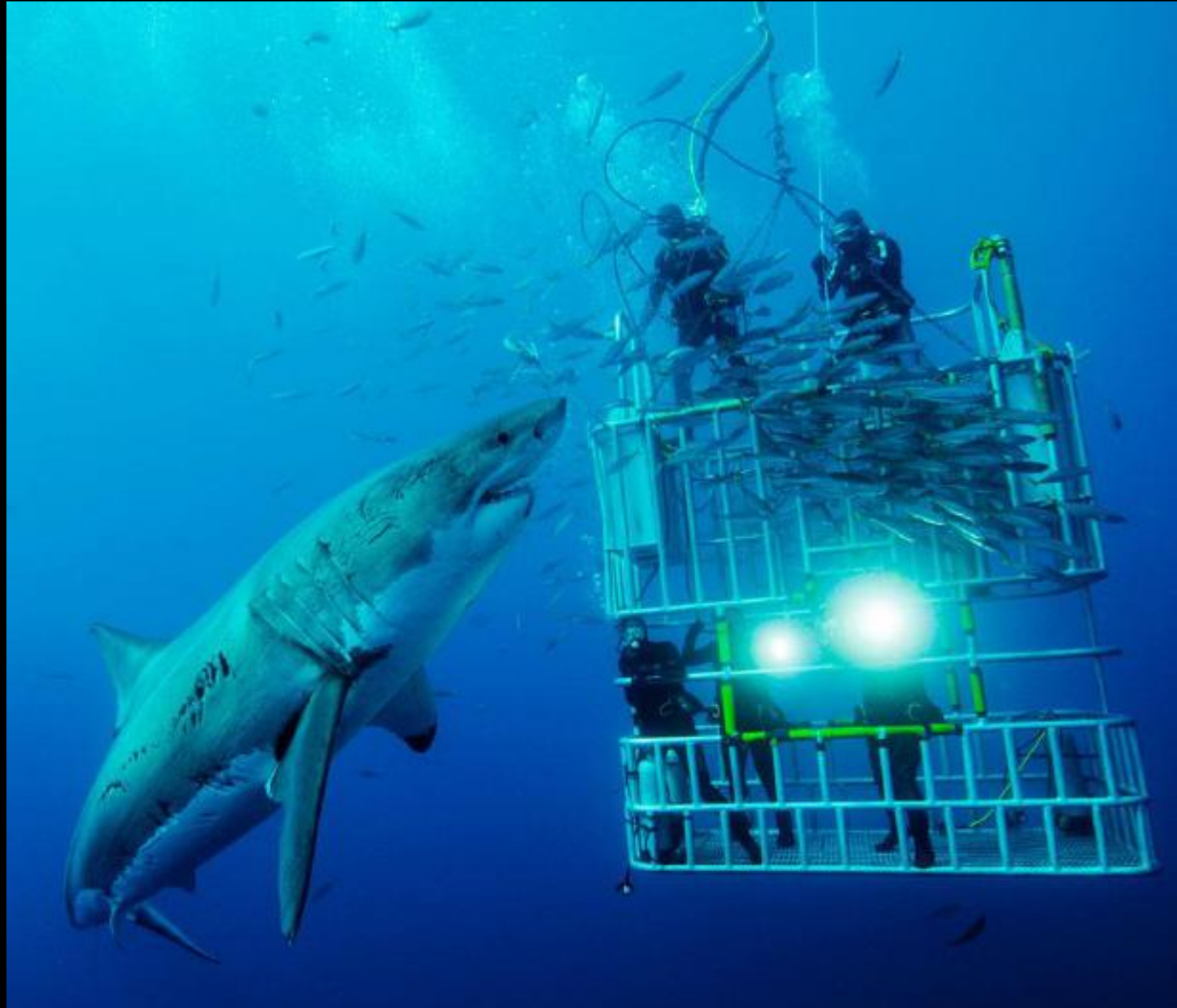
National Marine Fisheries Service (NMFS),  
Pacific Fishery Management Council (PFMC), and  
California Department of Fish and Game (CDFG)  
**are leads for fishery management in the sanctuary.**



# Partner Processes to Advance the EBM Initiative

Examples where MBNMS has looked to fisheries managers when fishing regulations provide enhanced ecosystem protection:

- EFH designation to protect habitat at the Davidson Seamount
- restrictions on kelp harvesting
- state action to move gillnets to deeper water
- prohibitions on krill harvesting
- prohibitions on the attraction of white sharks



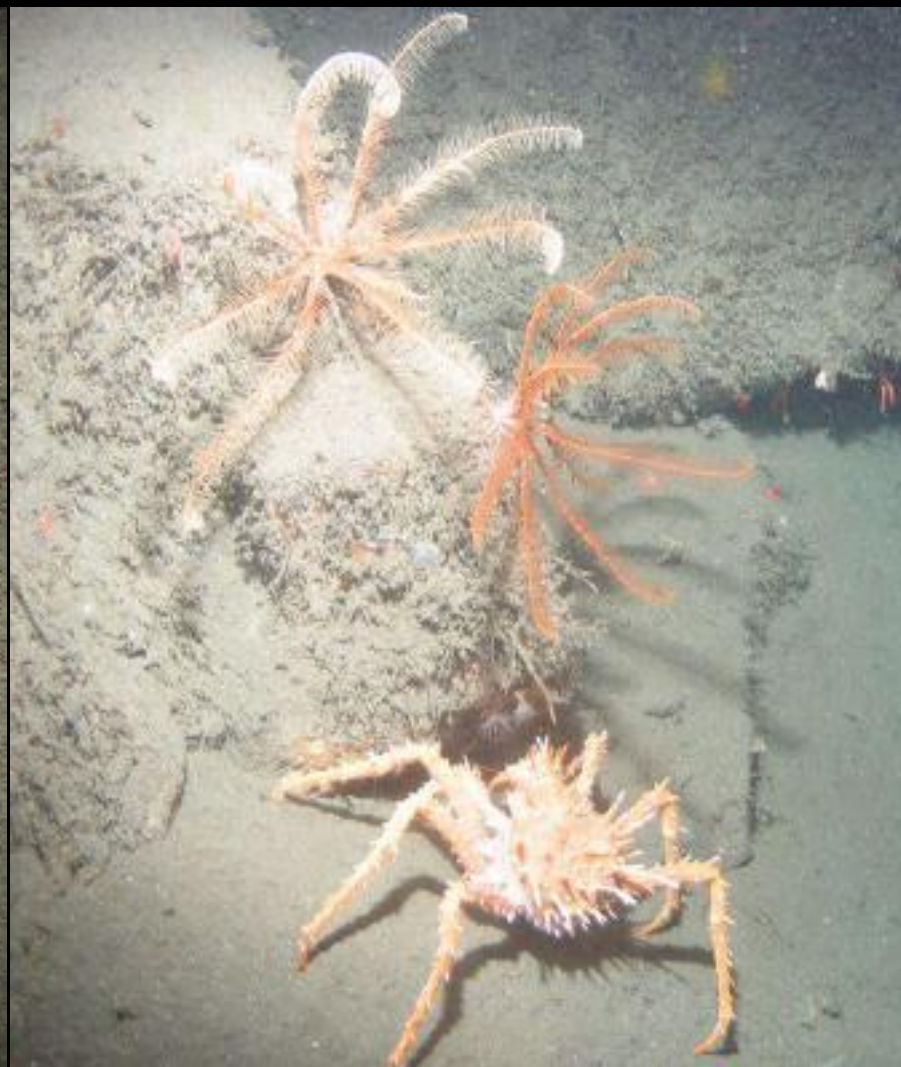
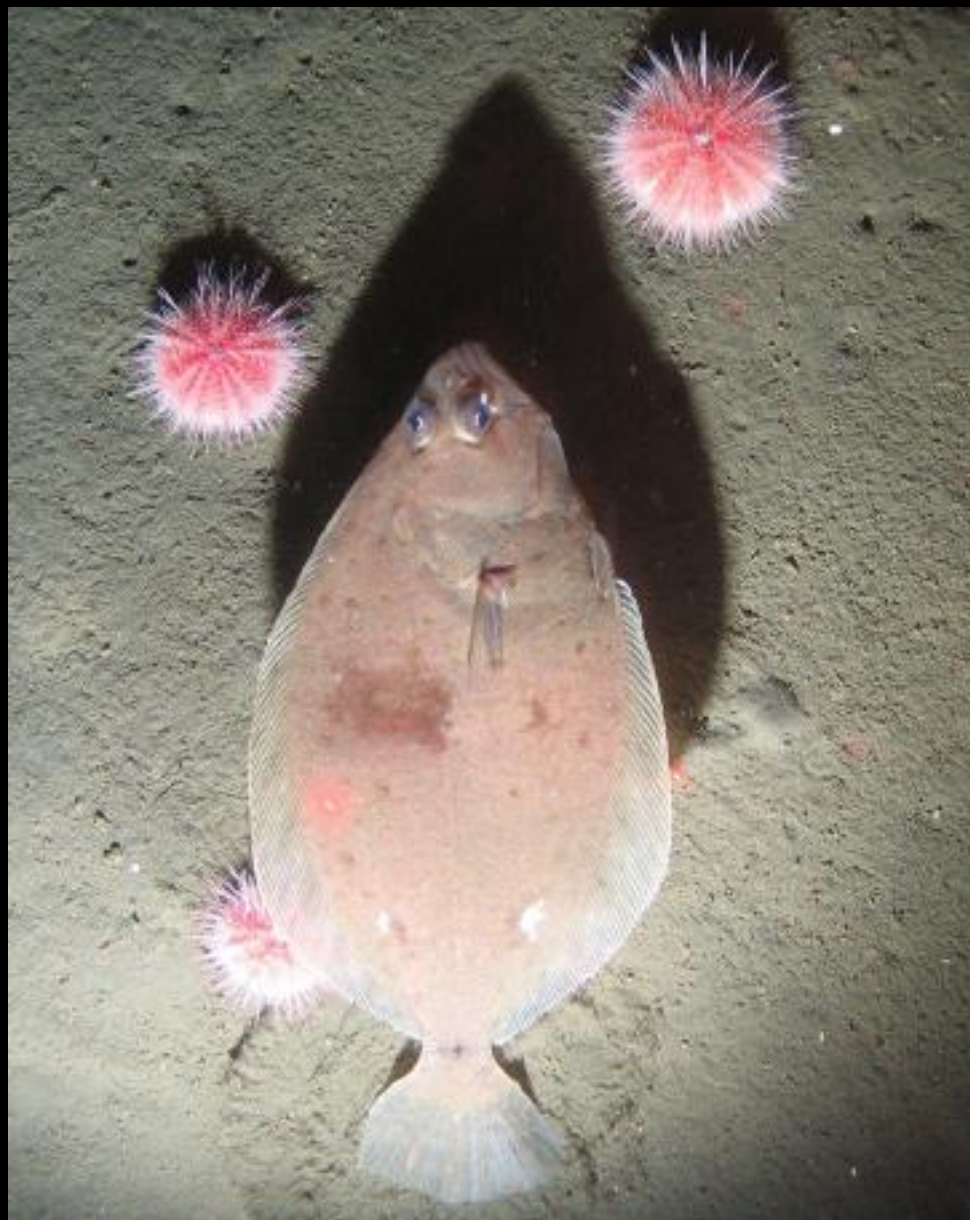
# EBM Initiative Goals

- Maintain and/or restore marine ecosystem health, services and function;
- Ensure protection of unique and rare features;
- Facilitate research to differentiate between natural variation and human impacts;
- Facilitate ecologically and economically sustainable uses, including fisheries.



# EBM Initiative Goals and EFH

- Focus on qualitative links to ecosystem health, services, structure and function
- Ensure protection of unique and rare features
- Facilitate research to differentiate between natural variation and human impacts
- Encourage EFH designations that facilitate sustainable uses and boost the local economy



# EFH Definition

**“...those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity”**

Magnuson-Stevens Act



# **Essential Fish Habitat Review**

**Sanctuary interests and strategies for benthic habitat**

**Pacific Fishery Management Council**

**National Marine Fisheries Service**

**Magnuson-Stevens Fishery Conservation and  
Management Act**

**Groundfish Fishery Management Plan**

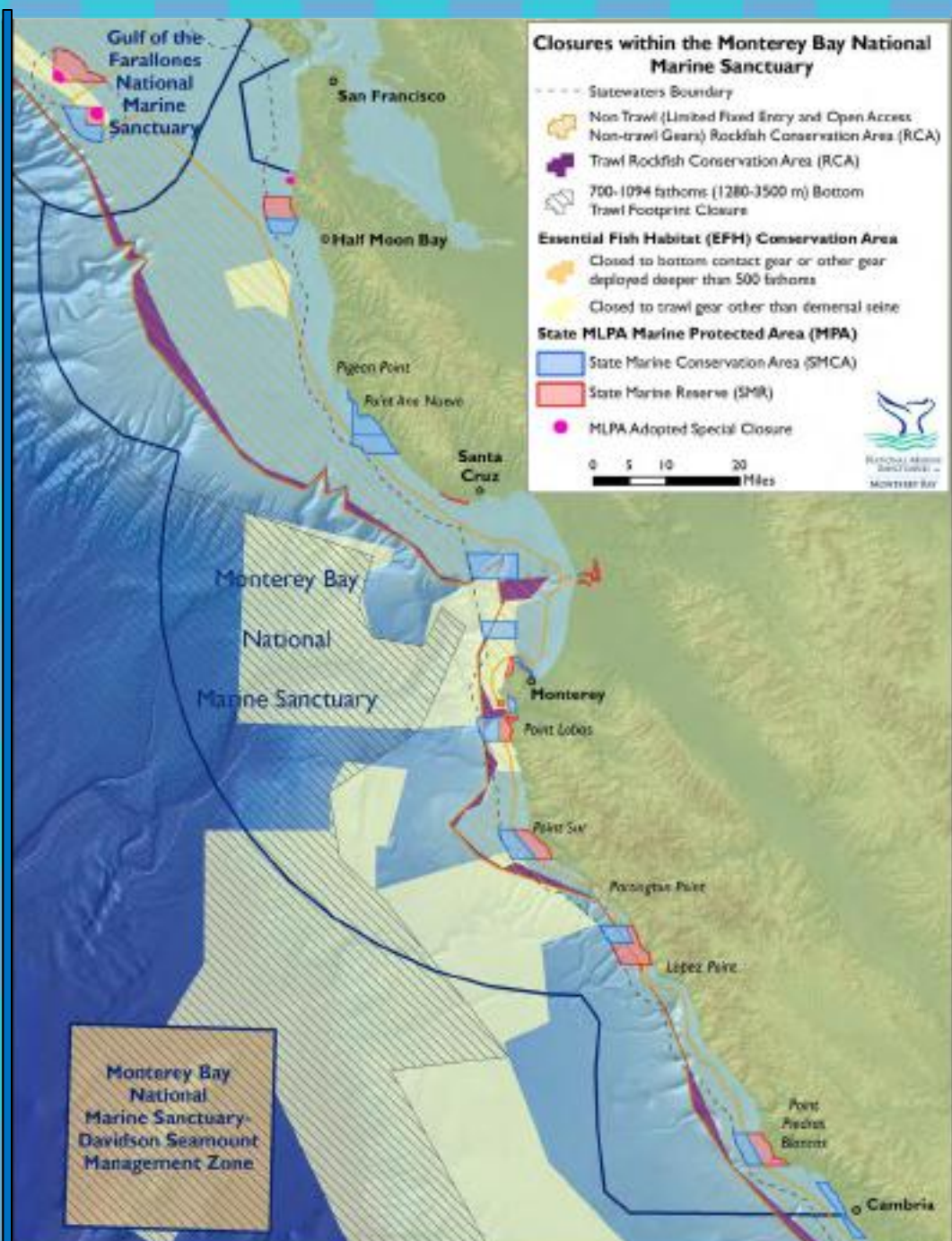


# Groundfish EFH 2005

*In 2005, the Pacific Coast Groundfish Fishery Management Plan was amended to:*

- Describe Essential Fish Habitat
- Designate Habitat Areas of Particular Concern within EFH
- Minimize to the extent practicable adverse impacts of fishing on EFH
- Address research needs
- Identify other actions to encourage conservation and enhancement of EFH













# PFMC Groundfish EFH Review Timeline

**March 2006**  
EFH  
designated

**2011**  
EFH  
Review  
Process  
begins

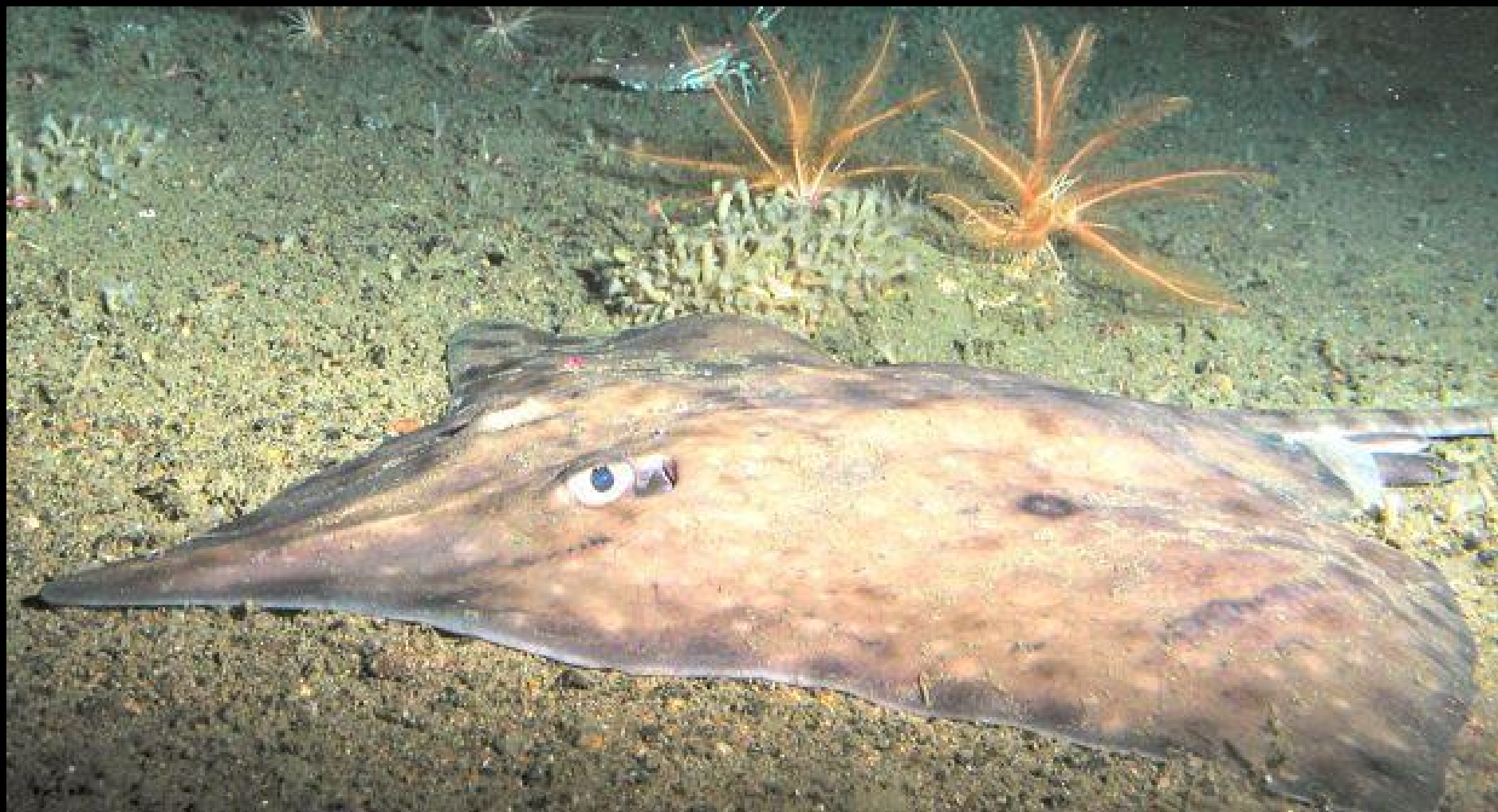
**Feb 2011**  
Call for  
new data

**March 2012**  
Report of  
new  
information

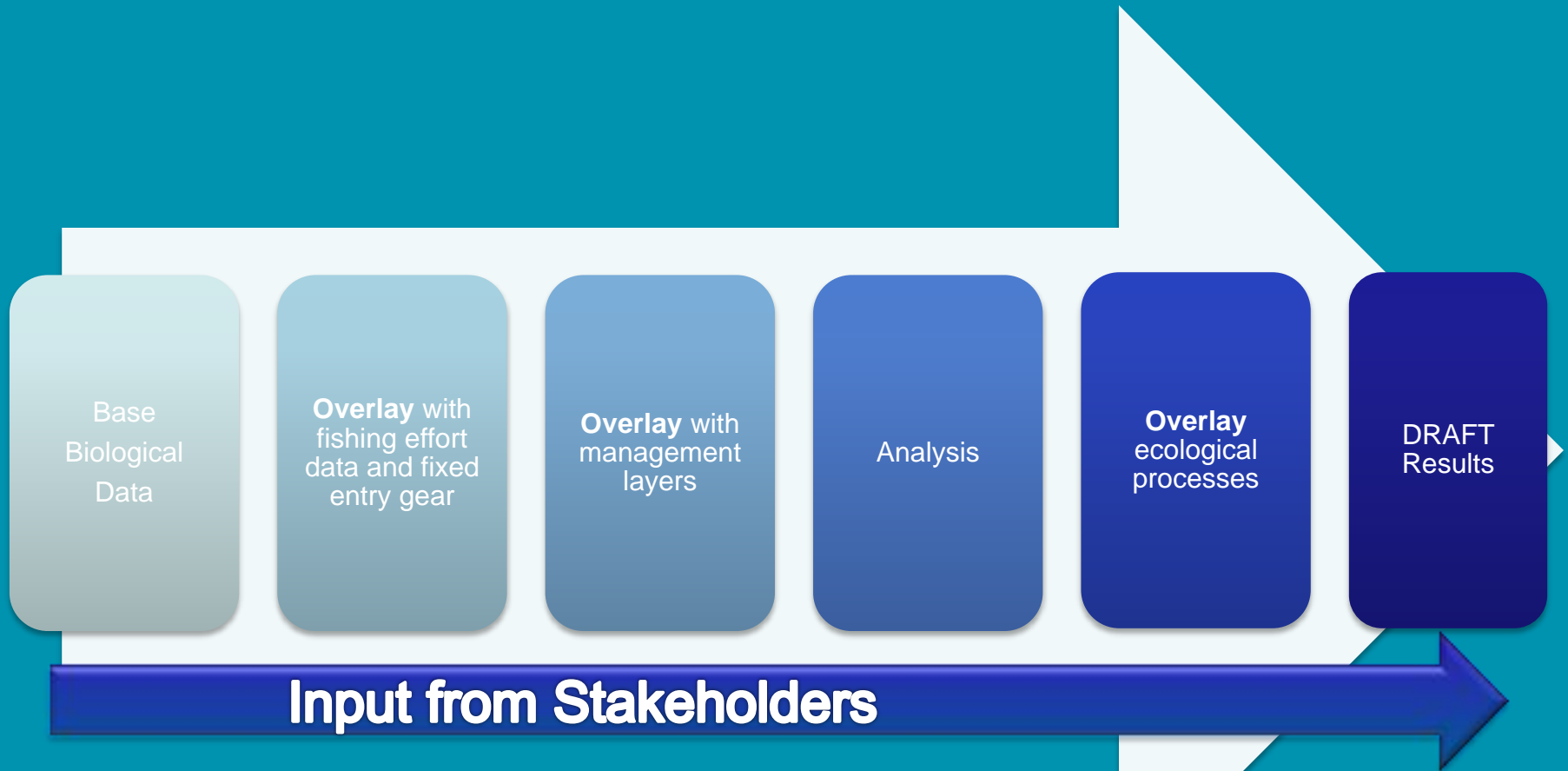
**April 2012**  
PFMC  
decides  
whether to  
consider  
proposals

**July 2012**  
Proposals  
likely Due

**Nov 2012**  
Decision  
on whether  
to modify  
FMP



# Analyzing Spatial Information





# Analyzing Spatial Information

- Based on best available science
  - Modeled data
  - Sampled data
- Understand data caveats





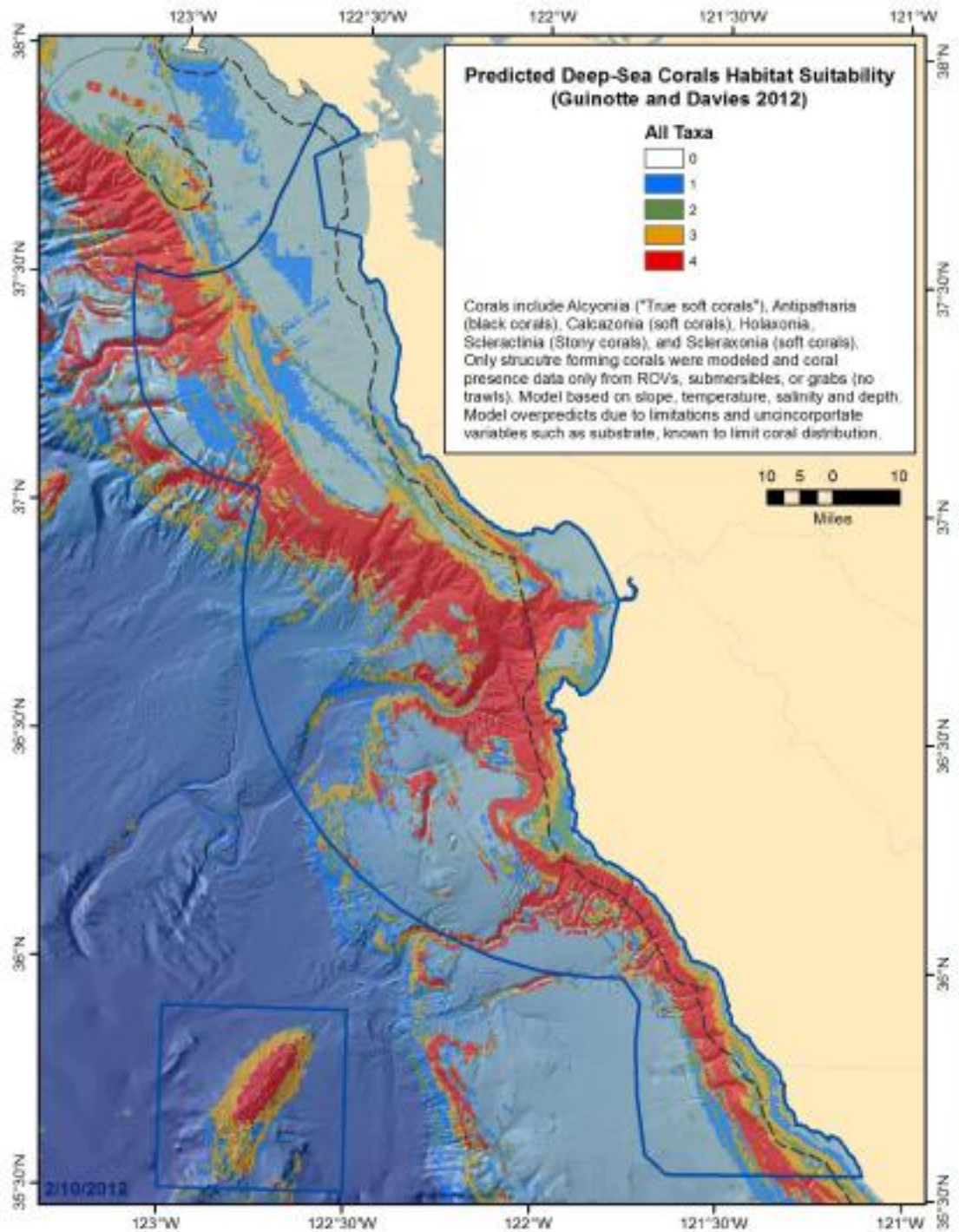


# Modeled data: Corals

Predicted  
Deep-Sea  
Coral  
Habitat  
Suitability

Sampled  
Corals

Hard  
Substrate

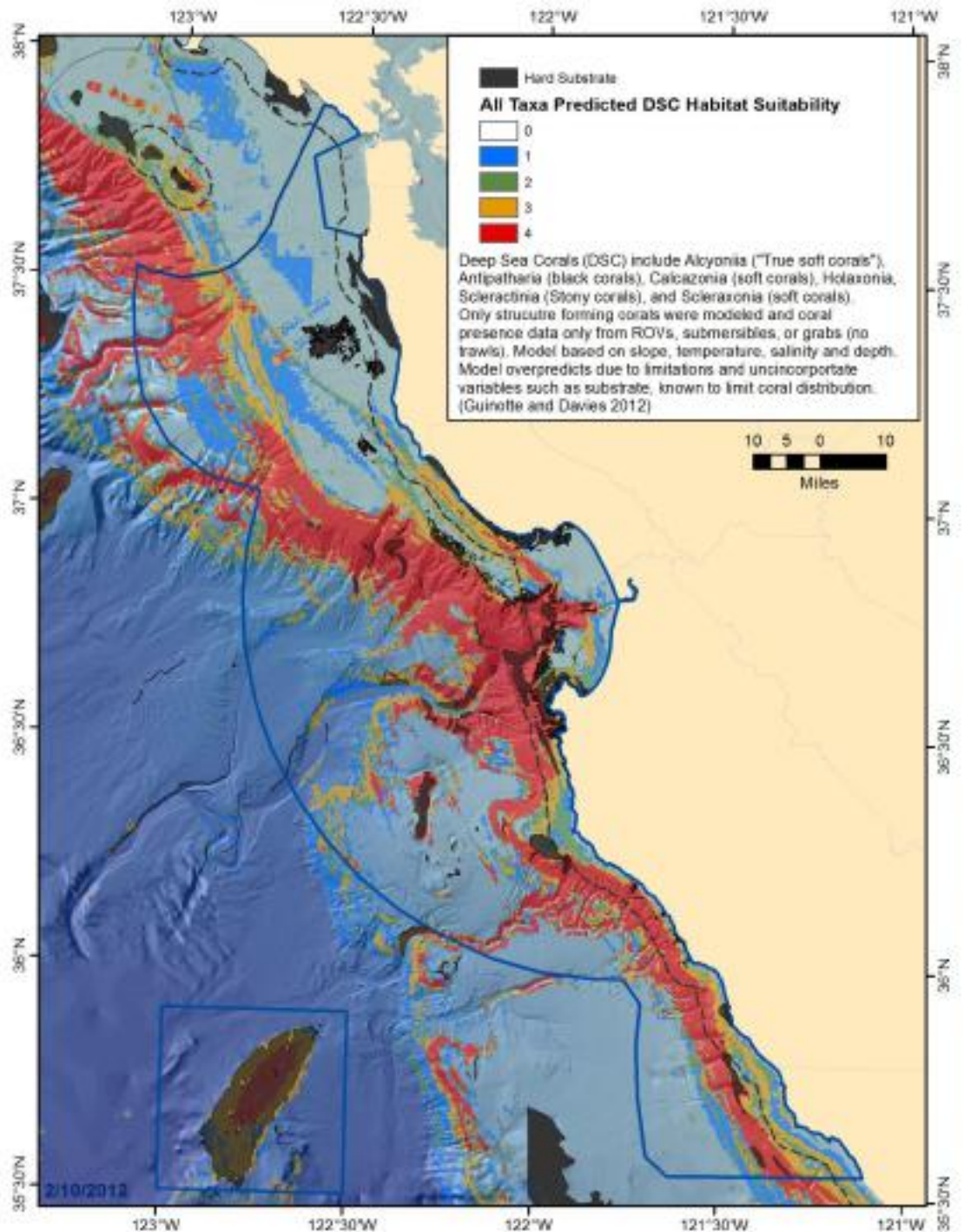


# Sampled data: Hard Substrate

Predicted  
Deep-Sea  
Coral  
Habitat  
Suitability

Sampled  
Corals

Hard  
Substrate



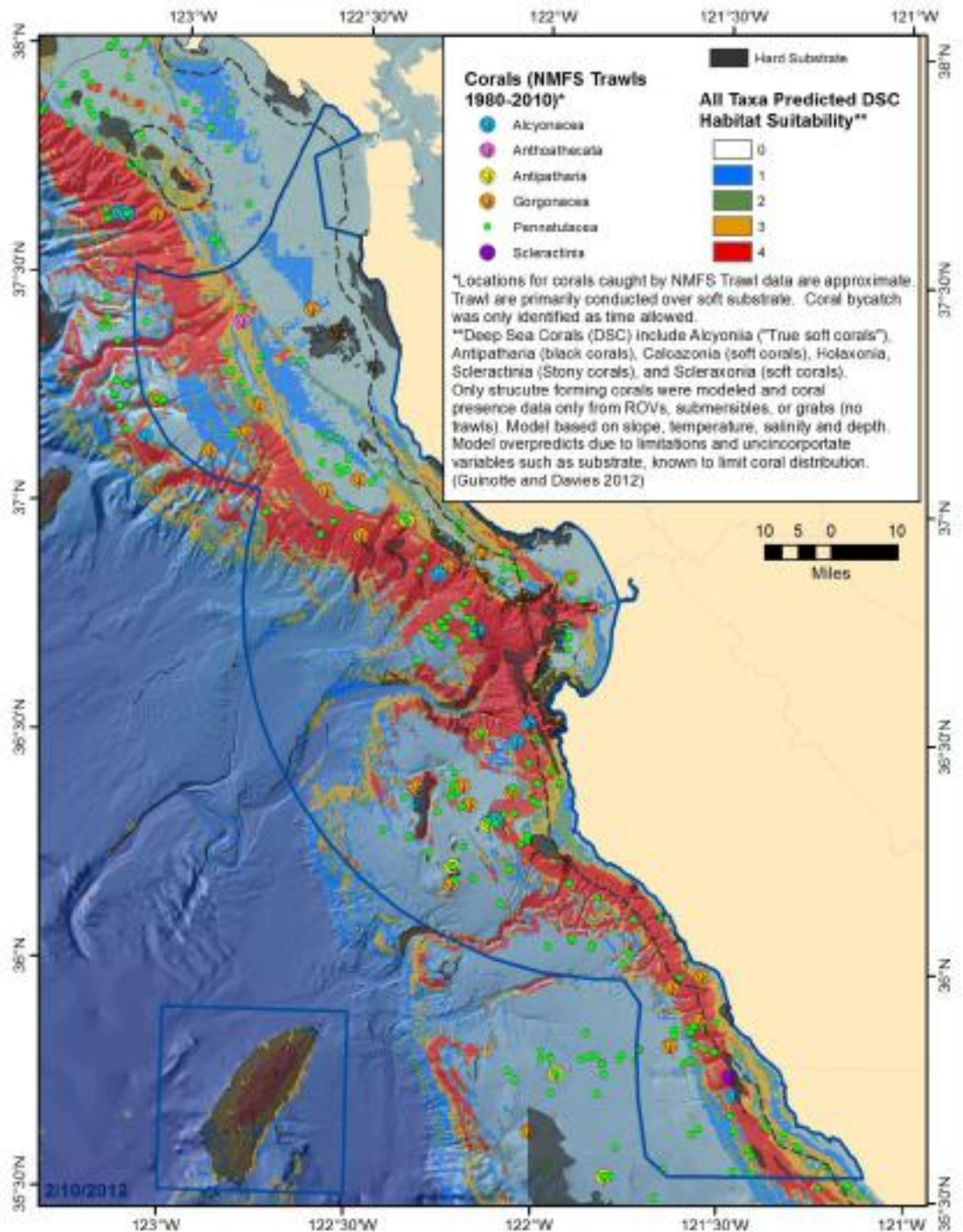


# Sampled data: Corals

Predicted  
Deep-Sea  
Coral  
Habitat  
Suitability

Sampled  
Corals

Hard  
Substrate



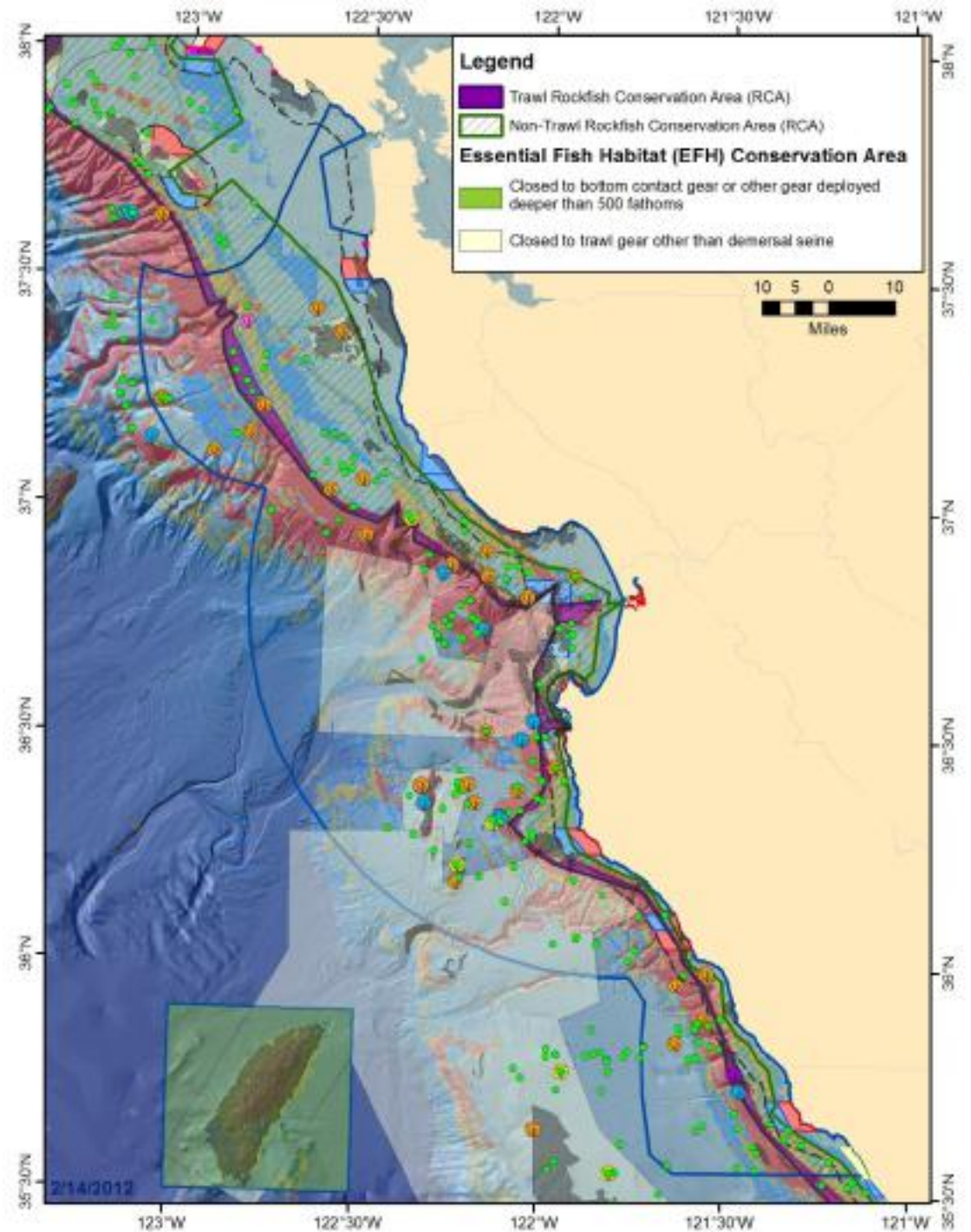


# Current EFH Areas

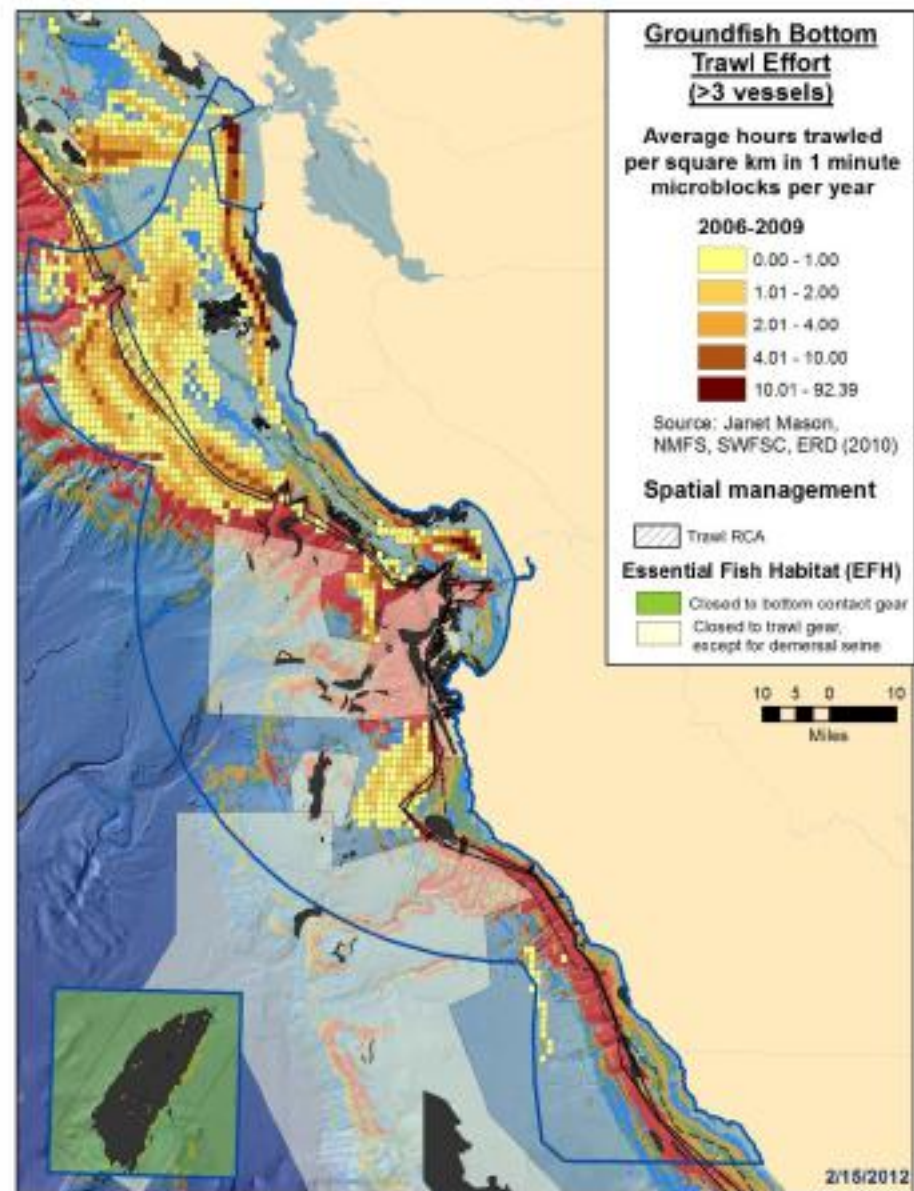
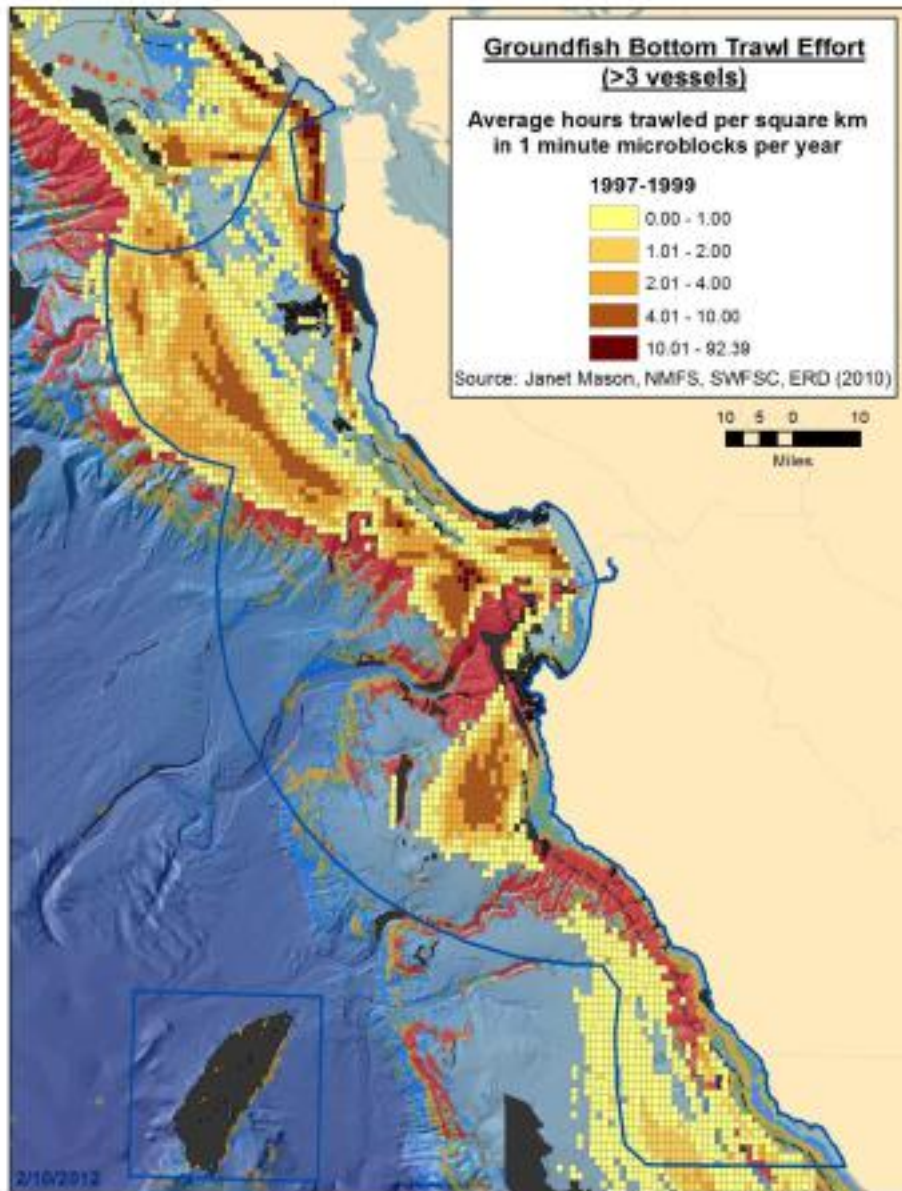
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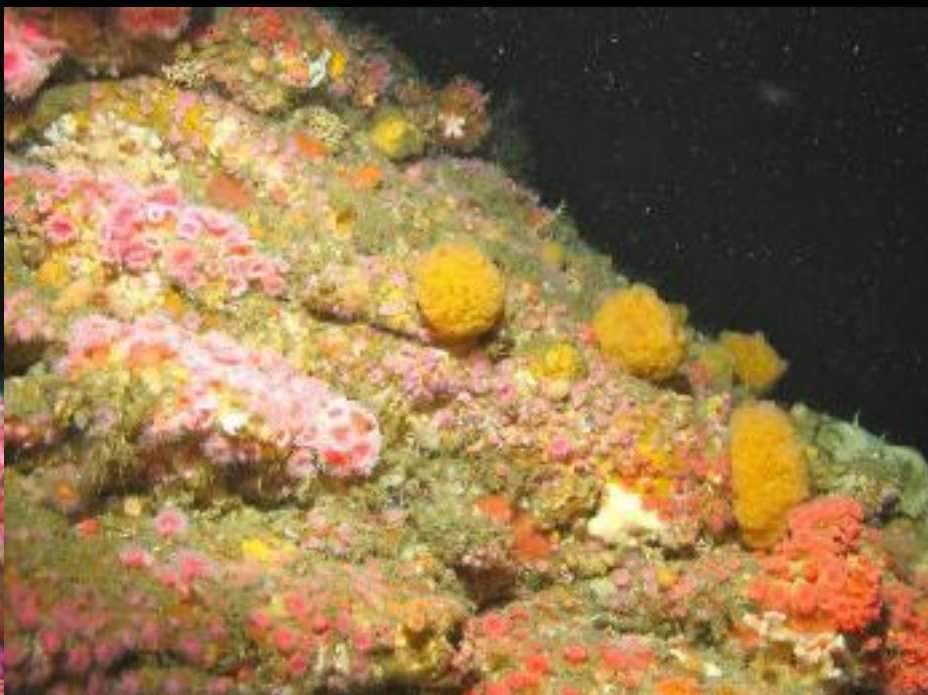
# Overlay with fishing effort data







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# Your information is essential

- locations of benthic habitat essential to groundfish species
- locations of benthic habitat that are unique, rare, remarkable
- locations of areas that are currently or historically of interest to the trawl fishery, and their relative value
- additional factors (e.g., quotas, natural variation, fuel) that interact with EFH to affect viability of the fishery
- locations necessary for research that may be affected by EFH regulations



# Your information is essential

- **Stage 1:** Now through March 22
  - One open house for all stakeholders
  - Limited number of targeted meetings
  - Submittal of written information
- Information gathering closes March 22
- Analysis proceeds to April 19 SAC meeting
- **Stage 2** input on analysis begins after April 19

